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PREFACE

Scope and Purpose of the HIV Molecular Immunology Database

The HIV Molecular Immunology Database was added as a companion volume to the NIAID, Division of AIDS-funded *Human Retroviruses and AIDS Genetic Sequence Compendium* in 1995. This volume is the 1997 issue. The HIV Immunology Database includes T-cell epitope maps on HIV proteins, alignments, and annotation, as well as a summary and map of linear B-cell epitopes and monoclonal antibodies with discontinuous epitopes. The protein alignments highlight the sequence heterogeneity among international isolates in well-characterized T-cell epitopes. The annotation includes information such as how specific epitopes were experimentally defined, HLA specificities for T-cell epitopes, isotypes of monoclonal antibodies, the initial antigenic stimulus immunogen, and brief notes describing the context in which a given epitope was studied. The database also contains five review articles relevant to the immunology of HIV. The complete database is available on the World Wide Web at <http://hiv-web.lanl.gov/immuno>, and the raw data files for the epitope tables are available at an ftp site there. Comments on the database or requests for the hard copy can be sent via email to immuno@t10.lanl.gov.

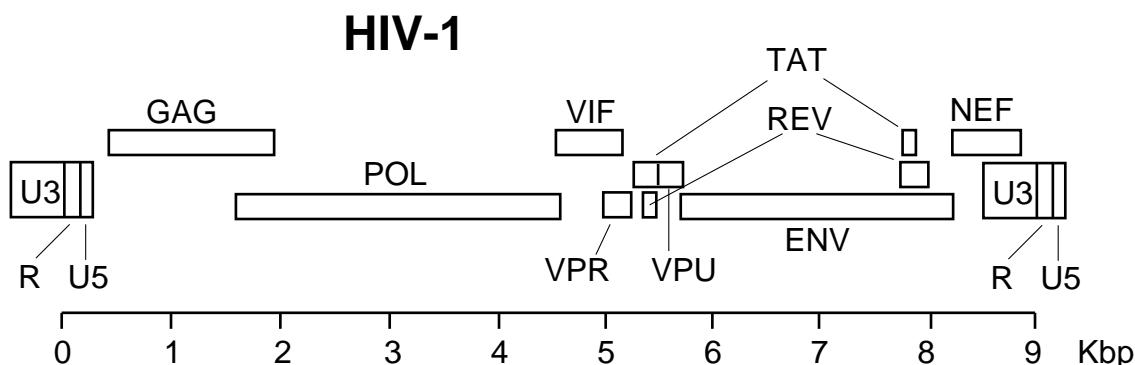
Citing the Database

This database may be cited as *HIV Molecular Immunology Database 1997*, Editors: Bette Korber, John Moore, Christian Brander, Richard Koup, Barton Haynes, and Bruce Walker. Publisher, Los Alamos National Laboratory, Theoretical Biology and Biophysics, Los Alamos, New Mexico, Publication number LAUR 98-485.

The Cover

The cover of the 1997 database shows a cell expressing HIV particles in various stages of development. Mature virions are characterized by a cone-shaped core, while several budding virions are visible. See the article by Hans Gelderblom in part IV of this compendium for more electron micrographs of HIV and a description of its replication processes and morphogenesis. Photo courtesy Hans Gelderblom of the Robert Koch Institute, Berlin.

Landmarks of the HIV-1 Genome



HIV/SIV PROTEINS

Name	Size	Function	Localization
Gag MA	p17	membrane anchoring; env interaction;nuclear transport of viral core. (myristylated protein)	virion
CA	p24	core capsid	virion
NC	p7	nucleocapsid, binds RNA	virion
	p6	binds Vpr	virion
Protease (PR)	p15	gag/pol cleavage and maturation	virion
Reverse Transcriptase (RT)	p66,p51	reverse transcription	virion
RNase H Integrase (IN)	(heterodimer)	RNAse H activity DNA provirus integration	virion virion
Env	gp120/gp41	external viral glycoproteins bind to CD4 receptor	plasma membrane, virion envelope
Tat	p16/p14	viral transcriptional transactivator	primarily in nucleolus/nucleus
Rev	p19	RNA transport, stability and utilization factor (phosphoprotein)	primarily in nuleolus/nucleus shuttling between nucleolus and cytoplasm
Vif	p23	promotes virion maturation and infectivity	cytoplasm (cytosol, membranes) virion
Vpr	p10-15	promotes nuclear localization of preintegration complex, inhibits cell division, arrests infected cells at G2/M	virion nucleus (nuclear membrane?)
Vpu	p16	promotes extracellular release of viral particles; degrades CD4 in the ER; (phosphoprotein only in HIV-1 and SIVcpz)	integral membrane protein
Nef	p27-p25	CD4 downregulation (myristylated protein)	plasma membrane, cytoplasm, (virion?)
Vpx	p12-16	Vpr homolog? (not in HIV-1, only in HIV-2 and SIV)	virion (nucleus?)
Tev	p28	tripartite tat-env-rev protein (also named Tnv)	primary in nucleolus/nucleus

Abbreviations

Common abbreviations used in this database.

Abrev.	Meaning
Ab	Antibody
AZT	Azidothymidine
CD4i	Antibody that has enhanced binding to gp120 in the presence of SCD4 (CD4 induced)
CSF	Cerebrospinal Fluid
CTL	Cytotoxic T Lymphocyte
DTT	Dithiothriitol
EIA	Enzyme Immuno Assay
ELISA	Enzyme Linked ImmunoSorbent Assay
Fabs	Fragment Antigen Binding-univalent antibody fragment
FIV	Feline Immunodeficiency Virus
gp	Glycoprotein
HIV	Human Immunodeficiency Virus
HLA	Human Leukocyte Antigens
HLA-MHC	Human Leukocyte Antigens-Major Histocompatibility Complex
IFN	Interferon
IL	Interleukin
IN	Integrase
Ig	Immunoglobulin
MAb	Monoclonal Antibody
MRC	Medical Research Council, UK
NIBSC	National Institute for Biological Standards and Control, UK
NIH	National Institute of Health
PBLs	Peripheral Blood Lymphocyte
PBMC	Peripheral Blood Mononuclear Cell
PR	Protease
RAC	ricin A chain
rec	recombinant
RIP	Recombinant Identification Program
RIPA	Radio Immuno Precipitation assay
rsgp160	recombinant soluble gp160
RT	Reverse Transcriptase
sCD4	soluble CD4
SDS	Sodium Duodecyl Sulfate
SIV	Simian Immunodeficiency Virus
Th	T-helper cell
TNF	Tumor Necrosis Factor
WB	Western Blot
